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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/796,452 | 03/09/2004 | Yoshito Nakamura | 12844.0068US01 | 2403 |
| 23552 | 7590 | 12/15/2004 | | EXAMINER |
| MERCHANT & GOULD PC | | | | MARTIR, LILYBETT |
| P.O. BOX 2903 | | | | |
| MINNEAPOLIS, MN 55402-0903 | | | ART UNIT | PAPER NUMBER |
| | | | 2855 | |

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/796,452 | NAKAMURA ET AL. |
| | Examiner Lilybett Martir | Art Unit 2855 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/9/04.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinoura (Pat. 6,574,853) in view of Kilmartin et al. (Pat. 5,889,215).

With respect to claim 1, Shinoura a shaft 31 formed of a magnetic material and provided with at least a magnetostrictive film as in elements 32 and 33; an exciting coil as in element 34 for exciting the magnetostrictive film provided on the shaft; a detection coil as in elements 35 and 36 for detecting a change in a magnetic field; and yoke portions respectively provided around outer peripheries of the exciting coil and the detection coil as in element 37. Shinoura fails to teach the provision of a magnetic shield section formed of a magnetic material provided around the outer periphery of the yoke portion. Kilmartin teaches a torque sensor that comprises a magnetic shield section formed of a magnetic material provided around the outer periphery of the yoke portion 23. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the

teachings of the torque sensor of Shinoura utilizing the teachings of the torque sensor of Kilmartin by providing and utilizing in said first sensor a magnetic shield section formed of a magnetic material provided around the outer periphery of the yoke portion to further prevent the exposition of external fields which can affect the accuracy of the sensor (Col. 1, lines 44-47 and Col. 2, lines 3-7).

- With respect to claim 4, Shinoura fails to teach the magnetic shield section being disposed parallel to the shaft so as to uniformly impart a magnetic effect from an outside world to the shaft. Kilmartin et al. teaches the majority of the magnetic shield section 16 being disposed parallel to the shaft 10 as noted in Figures 1a and 1b. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the torque sensor of Shinoura utilizing the teachings of the torque sensor of Kilmartin by providing and utilizing in said first sensor a magnetic shield section that is disposed parallel to the shaft to further ensure close magnetic coupling between the housing and the magnetostrictive material (Col. 3, lines 45-55).
- With respect to claim 5, Shinoura teaches the torque sensor is mounted as a sensor for detecting a torque occurring in a steering system of a vehicle having an electric power steering apparatus (Col. 1, lines 13-24).

3. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinoura in view of Kilmartin et al. further in view of Baatz (Pat. 5,578,918).

- With respect to claim 2, Shinoura and Kilmartir fail to specifically teach that their magnetic shield section is formed of a magnetic material exhibiting a low coercive force characteristic. Baatz teaches that it is commonly known to utilize magnetic materials that have a low coercive force in the casing 14 of a meter (Col. 8, lines 26-31). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the torque sensor of Shinoura as modified by Kilmartin and further utilizing the teachings of the meter of Baatz by choosing a low coercive force material to form the casing of said sensor to further prevent exterior magnetic fields from causing interference (Col. 8, lines 31-35).
- With respect to claim 3, Shinoura in view of Kilmartin fails to teach the utilization of a predetermined distance provided between the magnetic shield section and the yoke portion. Baatz teaches the utilization of a predetermined distance provided between the magnetic shield section and the yoke portion being expected (note that there is a gap between elements 134 and 28 or 30 as shown in Figure 7). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the torque sensor of Shinoura as modified by Kilmartin and further utilizing the teachings of the meter of Baatz by arranging the yoke and the housing so that there is a distance between them to prevent the direct transmission of unwanted

interference from one to the other therefore making said sensor more accurate.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (571)272-2182. The examiner can normally be reached on 9:00 AM to 5:30 PM.
5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilybett Martir
Lilybett Martir
Examiner
Art Unit 2855

LDM

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